

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 and 6 are amended and now read as follows:

1. (Currently Amended) A circuit arrangement for operating an exhaust-gas probe including a NO_x double chamber sensor, said exhaust-gas probe including: a heatable solid-state electrolyte body having first and second pump chambers; diffusion barriers 5 for separating said chambers from each other and from the exhaust gas; a third chamber communicating with the atmosphere; an external pump electrode exposed to the exhaust gas; a first oxygen pump electrode disposed in said first pump chamber; a second oxygen pump electrode disposed in at least one of said 10 first and second pump chambers; a nitrogen oxide pump electrode disposed in said second pump chamber; an air reference electrode disposed in said third chamber; and, said circuit arrangement comprising:

15 circuit means for applying pre-given voltages to said electrodes, respectively, and for generating, in a controlled manner, the following: a first oxygen pump current between said first oxygen pump electrode and said external pump electrode; a second oxygen pump current between from said second oxygen pump electrode and via said first oxygen pump electrode to said

20 external pump electrode; and, a nitrogen oxide pump current
between from said nitrogen oxide pump electrode and via said
first oxygen pump electrode to said external pump electrode; and,
said circuit means including: only one pump voltage
generating circuit unit; switching means for switching said pump
25 voltage generating circuit unit between respective ones of said
pump electrodes; and, said pump voltage generating unit
functioning to generate, in a controlled manner, all of the
voltages applied to said pump electrodes in dependence upon
respective reference voltages.

2. (Original) The circuit arrangement of claim 1, said pump
voltage generating circuit unit including an operational
amplifier; said switching means being switchable to connect
respective ones of said reference voltages and respective ones of
5 said voltages applied to said pump electrodes to said operational
amplifier which compares a corresponding one of said reference
voltages to a corresponding one of said voltages applied to said
pump electrodes; and, said pump voltage generating circuit unit
further including means for minimizing deviations of each of said
10 voltages applied to said pump electrodes from the corresponding
one of said reference voltages.

3. (Original) The circuit arrangement of claim 2, said
minimizing means including a plurality of integrators connected
to corresponding ones of three of said pump electrodes; said
switching means including ancillary switching means for
5 connecting the output of said operational amplifier sequentially

to said integrators which integrate corresponding ones of the
fault signals outputted by said operational amplifier; a
plurality of current measuring circuits connected downstream of
corresponding ones of said integrators with said current
10 measuring circuits measuring the pump currents flowing in
respective ones of said pump electrodes and outputting voltage
values proportional thereto.

4. (Original) The circuit arrangement of claim 1, said
switching means being configured in CMOS technology.

5. (Original) The circuit arrangement of claim 1, further
comprising a clock generator for periodically switching said
switching means at a frequency in the kilohertz range.

6. (Currently Amended) A combination of an exhaust-gas probe
and a circuit arrangement for operating the exhaust-gas probe,
the combination including:

5 said exhaust-gas probe including: a heatable solid-state
electrolyte body having first and second pump chambers; diffusion
barriers for separating said chambers from each other and from
the exhaust gas; a third chamber communicating with the
atmosphere; an external pump electrode exposed to the exhaust
gas; a first oxygen pump electrode disposed in said first pump
10 chamber; a second oxygen pump electrode disposed in at least one
of said first and second pump chambers; a nitrogen oxide pump
electrode disposed in said second pump chamber; an air reference
electrode disposed in said third chamber; and,

15 said circuit arrangement including: circuit means for
 applying pre-given voltages to said electrodes, respectively, and
 for generating, in a controlled manner, the following: a first
 oxygen pump current between said first oxygen pump electrode and
 said external pump electrode; a second oxygen pump current
 between from said second oxygen pump electrode and via said first
20 oxygen pump electrode to said external pump electrode; and, a
 nitrogen oxide pump current between from said nitrogen oxide pump
 electrode and via said first oxygen pump electrode to said
 external pump electrode; and,

25 said circuit means including: only one pump voltage
 generating circuit unit; switching means for switching said pump
 voltage generating circuit unit between respective ones of said
 pump electrodes; and, said pump voltage generating unit
 functioning to generate, in a controlled manner, all of the
 voltages applied to said pump electrodes in dependence upon
30 respective reference voltages.

7. (Previously Presented) The combination of claim 6, said pump
 voltage generating circuit unit including an operational
 amplifier; said switching means being switchable to connect
 respective ones of said reference voltages and respective ones of
5 said voltages applied to said pump electrodes to said operational
 amplifier which compares a corresponding one of said reference
 voltages to a corresponding one of said voltages applied to said
 pump electrodes; and, said pump voltage generating circuit unit
 further including means for minimizing deviations of each of said
10 voltages applied to said pump electrodes from the corresponding

one of said reference voltages.

8. (Previously Presented) The combination of claim 7, said minimizing means including a plurality of integrators connected to corresponding ones of three of said pump electrodes; said switching means including ancillary switching means for 5 connecting the output of said operational amplifier sequentially to said integrators which integrate corresponding ones of the fault signals outputted by said operational amplifier; a plurality of current measuring circuits connected downstream of corresponding ones of said integrators with said current measuring circuits measuring the pump currents flowing in 10 respective ones of said pump electrodes and outputting voltage values proportional thereto.

9. (Previously Presented) The combination of claim 6, said switching means being configured in CMOS technology.

10. (Previously Presented) The combination of claim 6, further comprising a clock generator for periodically switching said switching means at a frequency in the kilohertz range.